

WHAT IS CLAIMED IS:

1. A micromechanical device comprising:
 - a semiconductor substrate;
 - a member operable to deflect about a torsion axis to either of at least two states;
 - a switch driven for selectively connecting said member to a voltage signal.
2. The micromechanical device of Claim 1, further comprising:
 - a memory cell for storing positioning information, said memory cell having an output driving said switch.
3. The micromechanical device of Claim 1, further comprising:
 - a memory cell for storing positioning information, said memory cell comprising a capacitor storing a charge representing said positioning information.
4. The micromechanical device of Claim 1, further comprising:
 - a memory cell for storing positioning information, said memory cell comprising a capacitor storing a charge representing said positioning information and a pass transistor.
5. The micromechanical device of Claim 1, further comprising:
 - a bias electrode on either side of said torsion axis.
6. The micromechanical device of Claim 1, further comprising:
 - at least two bias electrodes, one on either side of said torsion axis, said at least two bias electrodes electrically connected.
7. The micromechanical device of Claim 1, said switch selectively connecting said member to a ground signal.
8. The micromechanical device of Claim 1, said switch comprising:
 - a pass transistor.

9. The micromechanical device of Claim 1, wherein said member is a micromirror.

10. The micromechanical device of Claim 1, further comprising:

a memory cell for storing positioning information, said memory cell comprising a capacitor storing a charge representing said positioning information and a pass transistor, wherein said switch comprises:

a pass transistor having a gate and two terminals, said gate connected to said memory capacitor, one said terminal connected to said member and a second said terminal connected to a voltage connection.

11. The micromechanical device of Claim 10, said voltage connection being a ground connection.

12. The micromechanical device of Claim 10, said memory cell operable to turn on said pass transistor when said memory cell capacitor holds a first charge.

13. The micromechanical device of Claim 10, said memory cell operable to turn off said pass transistor when said memory cell capacitor holds a second charge.

14. A micromechanical device comprising:

a deflectable member, each deflectable member supported by a torsion hinge and spaced apart from a substrate;

at least two bias electrodes supported by said substrate, one on each side of an axis of said torsion hinge;

a means for selectively connecting said deflectable member to a voltage potential.

15. The micromechanical device of Claim 14, said means for selectively electrically connecting comprising a pass transistor.

16. The micromechanical device of Claim 14, said means for selectively connecting comprising a pass transistor for electrically connecting said deflectable member to a ground potential.

17. The micromechanical device of Claim 14, said means for selectively electrically connecting comprising:

a pass transistor; and

a capacitor connected to a gate terminal of said pass transistor.

18. The micromechanical device of Claim 14, said means for selectively electrically connecting comprising a pass transistor.

a pass transistor; and

a capacitor, a first terminal of said capacitor connected to a gate terminal of said pass transistor and a second terminal of said capacitor connected to a ground potential.

19. A method of operating a micromechanical device, the method comprising:

selectively grounding a deflectable member; and

applying a reset signal to bias electrodes to reposition said selectively grounded deflectable member.

20. The method of Claim 19, further comprising:

applying a bias potential to said bias electrodes to hold said repositioned deflectable member in place.

21. The method of Claim 19, said deflectable member operable to deflect in one of two directions from a neutral position.

22. The method of Claim 19, said selectively grounding a deflectable member comprising:

grounding said deflectable member to cause said deflectable member to be repositioned during by said reset signal, and floating said deflectable member to prevent said deflectable member from being repositioned by said reset signal.

23. The method of Claim 19, further comprising:

applying an initialization signal to said bias electrodes to force said deflectable member to a known state.

24. The method of Claim 23, said applying an initialization signal to said bias electrodes to force said deflectable member to a known state comprising:

applying a voltage signal to one of said bias electrodes and a ground signal to another one of said bias electrodes.

25. A method of operating an array of micromechanical elements, the method comprising:

grounding a deflectable member of a first group of said micromechanical elements;

allowing a deflectable member of a second group of said micromechanical elements to electrically float; and

applying a reset signal to bias electrodes associated with said micromechanical elements in said first and said second groups.

26. The method of Claim 25, said reset signal operable to reposition said deflectable members of said first group.

27. The method of Claim 25, said reset signal operable to reposition said deflectable members of said first group and not said deflectable members of said second group.

28. The method of Claim 25, further comprising:

applying a bias potential to said bias electrodes to hold said repositioned deflectable members of said first group and said deflectable members of said second group in place.

29. The method of Claim 25, said deflectable members operable to deflect in one of two directions from a neutral position.

30. The method of Claim 19, further comprising:

applying an initialization signal to said bias electrodes to force said deflectable members to a known state.

31. The method of Claim 30, said applying an initialization signal to said bias electrodes to force said deflectable member to a known state comprising:

applying a voltage signal to one of said bias electrodes and a ground signal to another one of said bias electrodes.

100-200-300-400-500-600-700-800-900